UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,836	01/08/2002	Eyal Oren	06057 ·	4503

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THE LAW OFFICE OF KIRK D. WILLIAMS
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EXAMINER
CHACE, CHRISTIAN

ART UNIT	PAPER NUMBER
2187	4

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 January 2002</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-31</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>27-31</u> is/are allowed.

6)☒ Claim(s) <u>1-17 and 20-26</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) <u>18 and 19</u> are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>08 January 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date <u>2,3</u>.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

DETAILED ACTION

Election/Restrictions

During a telephone conversation with Kirk Williams (#43,229) on 12 May 2002 a provisional election was made without traverse to prosecute the invention of a method and apparatus, claims 1-17 and 20-31. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-19 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I.   Claims 1-17 and 20-31, drawn to accessing an associative memory, classified in class 711, subclass 108.

II.   Claims 18-19, drawn to configuring a memory based on data size, classified in class 711, subclass 171.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are

shown to be separately usable. In the instant case, invention II has separate utility such

as associative memory configuring based on data size. See MPEP § 806.05(d).

Information Disclosure Statement

IDS submitted 1 March 2002 has been considered by examiner. IDS submitted

31 march 2003 has been considered by examiner. Initialed and signed copies are

attached hereto.

Specification

35 U.S.C. 112, first paragraph, requires the specification to be written in "full,

clear, concise, and exact terms." The specification is replete with terms which are not

clear, concise and exact. The specification should be revised carefully in order to

comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or

verbose terms used in the specification are:

In lines 1-2 of page 8, the definition of the word "or" including "all of the

conjunctive terms." If all of the conjunctive terms were included, wouldn't that be an

"and," then?

Line 22 of page 8 recites, "programming and using" memories. What d

applicants mean by programming" and how is it different from "using," as a difference is

implied by the use of the word "and" in this situation.

Line 17 of page 10 recites, "wildcards programmed in...filed 172." What does

this mean? Is this a "don't care bit?"

Lines 18-20 of page 10 recites, "While......." This sentence does not appear to

make sense.

Lines 9-10 on page 15 do not make sense. If a first lookup does not match an entry in the first portion, how, then, can the second lookup match, "the same entry as the first lookup," when the first lookup doesn't match an entry?

Lines 14-22 on page 15 discuss processing according to a context, but nowhere does the specification explain what a "context" may be.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 1 recites the word, "deriving" with respect to an operation performed in accordance with a lookup operation. This term does not appear in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 7 depends on claim 5. Claim 5 recites the limitation, "...identifying a nested condition associated with the data item." Claim 7 recites, "...the piece of information does not include a nested condition indication." The specification does not include a description of identifying a nested condition *without an indication* of

same. Accordingly, it is unclear that applicants had possession of the claimed invention

at the time the application was filed.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with

the enablement requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to enable one skilled in the art to which it

pertains, or with which it is most nearly connected, to make and/or use the invention. As

discussed supra, the specification does not enable one of ordinary skill in the art to

make and/or use the claimed invention by being able to identify a nested condition

without an indication of same.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-17 and 20-26 are rejected under 35 U.S.C. 102(a) and (e) as being

anticipated by Uzun (US Patent #6,606,681).

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome

either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the

invention "by another," or by an appropriate showing under 37 CFR 1.131.

With respect to independent claim 1, a method is disclosed in the abstract.

Programming is interpreted by examiner to be writing. An associative memory is

define din the instant specification to be, "all types of known or developed associative

memories...and other data structures," on page 7, line 16. Accordingly, optimized CAM

block 202 is a "data structure," as a data structure is anything that stores data.

Optimized CAM block 202 stores data. A plurality of sets of entries is disclosed in

column 10, lines 60-61 as "entries in CAM 256" which is part of optimized CAM block

202. Each of the plurality of sets of entries being associated with a different one of a

plurality of unique decoder fields, and each entry within a particular one of the plurality

of sets of entries including a same one of the plurality of unique decoder fields is

disclosed in column 10, lines 61-62, with tag bits #402 being the decoder value, and

Key #404 being the entry. See figure 4.

Receiving a piece of information and deriving a first lookup word are interpreted

by examiner to be the same thing, as they are not discussed separately in the

specification. The data item is key #404 and the decoder value is tag bits #402 from

figure 4. Performing a lookup operation on the associative memory using the first

lookup word to generate a first lookup result is disclosed in column 6, lines 34 and 38-

39 as returning an address for a matching entry.

With respect to claim 2, a first set of the plurality of sets of entries including a different number of entries than a second set of the plurality of entries is disclosed in column 2, lines 58-60.

With respect to claim 3, the decoder value including a set value and a subset value is disclosed in figure 4 as #402 containing set value #406 and subset value #408.

With respect to claim 4, receiving a second piece of information including a data item and a nested condition indication is disclosed in column 5, lines 33-37. A nested condition is extracted address information, as a nested condition is merely one constant inside another. If address information must be extracted, clearly, it must be extracted from something (constant) which it was inside.

Identifying the nested condition is inherent in a nested condition indication. In other words, if a nested condition is indicated, it is inherently identified.

Generating a plurality of lookup words in response to said identifying, each of the plurality of lookup words including the data item and one of a plurality of predetermined decoder values is disclosed in column 6, lines 34 and 38-39, and also in TABLE 1, with DA/SA bits being, "...one of a plurality....values."

With respect to independent claim 5, in light of the same discussion of the similar limitations with respect to claims 1-4, a plurality of sets of entries is also disclosed in column 2, lines 58-60 as K*N.

Programming an associative memory with a plurality of sets of entries, each of the plurality of sets of entries including a different one of a plurality of unique decoder fields, receiving a piece of information including a data item, identifying a nested

condition associated with the data item, and, in response to said identifying the nested condition, generating a plurality of lookup words with a predefined set of decoder fields of the plurality of unique decoder fields is also disclosed in column 7, line 57 into column 8, line 7.

With respect to claim 6, as discussed supra, the piece of information including a nested condition indication is inherent.

With respect to claim 7, the piece of information not including a nested condition indication is disclosed in the abstract as address information (that was not extracted, as discussed with respect to claim 4).

With respect to claim 8, at least two of the plurality of sets of entries having a different number of entries is disclosed in column 7 into column 8 by the formula K*N for each "set."

With respect to claim 9, each plurality of entries having at least two entries is disclosed in column 2, lines 58-60 as K>1, which includes, at least two.

With respect to claim 10, forwarding a lookup indication to "a receiver," which can be anything that receives, as it is not defined further in the specification, is disclosed as a HIT signal in figure 2B.

With respect to claim 11, the lookup indicator indicating the presence or absence of the nested condition is inherent. As the nested condition is the extracted address information, as discussed supra, a HIT signal would indicate the address's presence in the memory. No HIT signal would indicate the absence of the extracted address.

With respect to claim 12, the lookup indicator indicating a result context is disclosed in column 6, lines 61-64. Examiner interprets a "context" to be whether a source or destination address or both are involved. See TABLE 1 also in column 6.

With respect to claim 13, forwarding the plurality of lookup words to an associative memory is disclosed in column 6, lines 34 and 38-39.

With respect to claim 14, the associative memory including a ternary or binary CAM is disclosed in the title as "CAM." The CAM must, inherently, be binary or ternary, as there is no other kind of CAM.

With respect to claim 15, a computer-readable memory containing computer-executable instructions for performing the method of claim 5 is being treated, for the purposes of examination, and an independent claim. It is anticipated by the prior art cited with respect to claim 5. Also, a computer must always be told what to do, so using instructions is inherent. See column 5, lines 38-40 and 51-54, also, which discusses CAM control logic (that must, inherently, be programmed).

With respect to claim 16, performing a lookup operation on each of the plurality of lookup words to generate a plurality of lookup results is disclosed in column 6, lines 34 and 38-39.

With respect to claim 17, comparing a first lookup result of the plurality of lookup results with a second lookup result of the plurality of lookup results to identify whether to perform processing based on the first or second lookup result is disclosed in column 8, lines 15-20.

With respect to independent claim 20, a lookup word generator for receiving a data item and for generating a plurality of lookup words, each of the plurality of lookup words including the data item and a different one of the plurality of unique decoder fields is disclosed in figure 2B as CAM control logic #254.

An associated memory, coupled to the lookup word generator, for performing a lookup operation of each of the plurality of lookup words and to produce a plurality of associative memory results is disclosed as CAM #256, also in figure 2B.

With respect to claim 21, a memory, coupled to the associative memory, to receive the plurality of associative memory results, and to generate a plurality of memory lookup results is disclosed in figure 2B as Status Memory #258.

With respect to claim 22, a receiver to receive the results is inherent – otherwise, why send them?

The lookup word generator further communicating a lookup indication to the receiver is disclosed in figure 2B as the "HIT" signal.

With respect to claim 23, a receiver is inherent, as discussed supra.

With respect to claim 24, a lookup indication to the receiver is discussed supra as a HIT signal in figure 2B.

With respect to claim 25, the receiver comparing a first associative memory result with a second associative memory result is disclosed in figure 2A as control logic #204, which outputs match signals.

With respect to claim 26, a result of said comparison determines the result to be processed is, again, disclosed as a match in figure 2A.

Allowable Subject Matter

Claims 27-31 are allowed.

Examiner notes that claims 27-29 invoke 35 USC 112, 6th paragraph via their use

of means-plus-function language. Accordingly, the details of the specification are

looked to in order to anticipate the claim language. As those details are not present in

the cited prior art of record in enough detail to anticipate the means disclosed in the

instant specification and their equivalents, examiner must find them allowable. Claims

30 and 31, which do not invoke 35 USC 112, 6th paragraph, but are dependent upon the

claims discussed supra, which do, are allowable for at least the reasons cited supra with
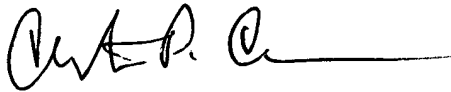
respect to same.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Christian P. Chace whose telephone number is

703.306.5903. The examiner can normally be reached on 9-4-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Donald Sparks can be reached on 703.308.1756. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christian P. Chace